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EXAMINER

JERABEK, KELLY L

ART UNIT

PAPER NUMBER

2622

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/067,463	<b>Applicant(s)</b> ORBOUBADIAN, VAHID	
	<b>Examiner</b> KELLY L. JERABEK	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 26-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 26-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 4/15/2008 have been fully considered but they are not persuasive.

### **Response to Remarks:**

Applicant's arguments regarding claim 1 (Amendment pages 3-4) state that although the Narayanaswami reference discloses an image capturing system and method for automatically watermarking a plurality of recorded camera and image parameters it fails to specifically disclose receiving information on a first static camera characteristic suitable to enhance image reproduction, nor does it disclose receiving information on a first static camera characteristic suitable to identify a single camera that is the source of the image by embedding unique single camera characteristics. The Examiner agrees that the Narayanaswami reference fails to specifically disclose this, however the Examiner maintains that the Inoue and Safai references have been cited to show that it is well known in the digital imaging art to store static camera characteristics suitable to enhance image reproduction in association with captured images as disclosed by Inoue and it is also well known in the digital imaging art to store to store first static camera characteristics suitable to identify a single camera that is

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the source of an image by embedding unique single camera characteristics as disclosed by Safai. The Narayanaswami reference discloses an image capturing system and method for automatically watermarking a plurality of recorded camera and image parameters and the Inoue and Safai references disclose that it is well known in the digital imaging art to store static camera characteristics suitable to enhance image reproduction in association with captured images as disclosed by Inoue and it is also well known in the digital imaging art to store to store first static camera characteristics suitable to identify a single camera that is the source of an image by embedding unique single camera characteristics as disclosed by Safai. Therefore, the Examiner maintains that the combination of the Narayanaswami, Inoue and Safai references discloses all of the limitations of claim 1.

Applicant's arguments regarding claim 1 (Amendment pages 4-7) state that the applicant believes that the Inoue reference discloses a non-analogous art because Inoue teaches a camera wherein input device type unique information, the image sensed and additional information are stored in three different memories and the printer has to be directly attached to the camera, while the key point of the claimed invention is "embedding camera information and image capture related information in a digital from of an image". Therefore, the applicant believes that any combination of Narayanaswami with Inoue is non-obvious. The Examiner respectfully disagrees. The Narayanaswami reference discloses an image capturing system and method for automatically watermarking

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a plurality of recorded camera and image parameters and the Inoue reference disclose that it is well known in the digital imaging art to store static camera characteristics suitable to enhance image reproduction in association with captured images (page 4, paragraph 42-page 5, paragraph 48). Therefore, the Narayanaswami reference provides the teaching of embedding camera information and image capture related information in a digital form of an image. The Inoue reference was cited to show that it is well known in the digital imaging art to store static camera characteristics suitable to enhance image reproduction in association with captured images (col. 4, line 35-col. 5, line 22). The Examiner maintains that it would have been obvious for one skilled in the art to have been motivated to include image additional information such as camera type information as disclosed by Inoue as one of the camera characteristics capable of being watermarked into an image as disclosed by Narayanaswami. Therefore, the combination of the Narayanaswami, Inoue and Safai references discloses all of the limitations of claim 1.

Applicant's arguments regarding claim 1 (Amendment pages 7-9) state that the Safai reference discloses appending an authenticity stamp to a digital image while the claimed invention is embedding a watermark in a digital image. The applicant states that both technologies are very different and the applicant believes that Safai discloses a non-analogous art in regard of the claimed invention. The Examiner respectfully disagrees. The Narayanaswami reference discloses an image capturing system and method for automatically watermarking

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a plurality of recorded camera and image parameters and the Inoue reference disclose that it is well known in the digital imaging art to store static camera characteristics suitable to enhance image reproduction in association with captured images (page 4, paragraph 42-page 5, paragraph 48). Therefore, the Narayanaswami reference provides the teaching of embedding camera information and image capture related information in a digital form of an image. The Safai reference was cited to show that it is well known in the digital imaging art to store first static camera characteristics suitable to identify a single camera that is the source of an image by embedding unique single camera characteristics (col. 15, lines 4-50). The Examiner maintains that it would have been obvious for one skilled in the art to have been motivated to store first static camera characteristics suitable to identify a single camera that is the source of an image as disclosed by Safai as one of the camera characteristics capable of being watermarked into an image as disclosed by Narayanaswami. Therefore, the combination of the Narayanaswami, Inoue and Safai references discloses all of the limitations of claim 1.

In response to applicant's argument that the Inoue and Safai references are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both the Inoue and

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Safai references disclose digital image capturing systems that are capable of storing additional information in association with captured images. Therefore, the Examiner maintains that the Inoue and Safai references are analogous art.

Applicant's arguments regarding independent claims 8 and 26 (Amendment pages 9-12) state that the same arguments apply for claims 8 and 26 as disclosed above regarding claim 1. Therefore, the responses given above regarding claim 1 also apply to claims 8 and 26 and their respective dependent claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-8, 10-16 and 26-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narayanaswami et al. US 2003/0011684 in view of Inoue et al. US 6,273,535 and further in view of Safai US 6,642,956.**

Re claim 1, Narayanaswami discloses a method of embedding camera information and image capture related information in a digital form of an image, comprising: receiving information on camera characteristics suitable to enhance image reproduction (parameters such as camera location, image mode, etc.) (page 4, paragraph 43); receiving camera setting information (focal length, focus distance, frame number, image quality, flash status, light meter readings, etc.) related to a first captured digitized image (page 3, paragraphs 34-35); generating an encryption key based at least in part on the camera characteristics (page 5, paragraph 46); embedding a watermark in said first captured digitized image, wherein the watermark contains at least a portion of the information on the camera characteristics and at least a portion of the camera setting information related to said first captured digitized image; and encrypting the watermark using the encryption key (page 4, paragraph 42 - page 5, paragraph 48). Additionally, the Narayanaswami reference states that it is well known to watermark and record parameters such as camera location, camera velocity, image mode, image quality, compression, date, time, exposure duration, aperture, light meter reading, flash status, lens focal length, auto focus distance, photographer and voice annotation with each image (page 4, paragraph 43). Narayanaswami further states that the parameters listed are not illustrative of every parameter that may be watermarked and that one of ordinary skill in the art could envision additional parameters that may be recorded and utilized in accordance with the teachings of the invention. However, although the Narayanaswami reference discloses all of the above limitations it fails to specifically state that any of the



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camera characteristics capable of being watermarked are static camera characteristics suitable to enhance image reproduction or suitable to identify a camera that is the source of the image.

Inoue discloses a digital camera capable of storing additional image information together with sensed image information. Inoue states that in order to print an image a printer (2) requests the digital camera (1) to transfer image information and image additional information (11) corresponding to that image. Inoue further states that a processing selector (12) selects appropriate print processing based on the obtained image additional information (11) (figs. 1-2; col. 4, lines 35-65). In addition, Inoue states that the image additional information (11) used for image processing (used to enhance image reproduction) may include digital input device unique information such as camera type information (13-16) (static camera characteristics) (col. 4, line 66-col. 5, line 22). Thus, it can be seen that Inoue teaches receiving information on a first static camera characteristic suitable to enhance image reproduction (image additional information 11 is used to select an appropriate one of a plurality of kinds of printing control information) and receiving information on a first static camera characteristic suitable to identify a camera that is the source of the image (the image additional information 11 used for image processing may include digital input device unique information such as camera type information 13-16). Therefore, it would have been obvious for one skilled in the art to have been motivated to include image additional information such as camera type information as disclosed by Inoue as one of the camera characteristics capable

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of being watermarked as disclosed by Narayanaswami. Doing so would provide a means for attaching information regarding static camera characteristics in order to perform the most suitable printing control processing (Inoue: col. 4, lines 61-65). Although the combination of the Narayanaswami and Inoue references discloses all of the limitations it fails to specifically state the first static camera characteristic suitable to identify a camera that is the source of the image includes embedding unique single camera characteristics such as the serial number of a camera.

Safai discloses a digital camera including a digital image processor that includes an authentication stamper. Safai states that an authentication stamper (418) of a digital image processor (310,400) of a digital camera (300) may attach user specific and camera specific information to image data such as camera user name, camera user address and camera serial number (figures 4, 10A, 10B; col. 15, lines 4-50). Therefore, it would have been obvious for one skilled in the art to have been motivated to attach user specific and camera specific information such as camera user name, camera user address and camera serial number as disclosed by Safai to image data captured by the digital camera system disclosed by the combination of the Narayanaswami and Inoue references. Doing so would provide a means for easily verifying and authenticating that an image was captured by a specific camera or camera user.

Re claims 2-4, the combination of Narayanaswami, Inoue and Safai discloses all of the limitations of claim 1 above. Additionally, Narayanaswami

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states that a first static camera characteristic (image sensor shape) (camera capable of being in portrait or landscape mode indicates that the image sensor of the camera is rectangular in shape) as well as many other parameters may be embedded as a watermark in a digital image (page 3, paragraph 35; page 4, paragraph 43). However, Narayanaswami does not specifically state that camera parameters such as camera image sensor bad pixel characteristics, sensor current values, and image sensor sensitivities are embedded as a watermark in a digital image. The Examiner takes **Official Notice** that camera parameters such as camera image sensor bad pixel characteristics, sensor current values, and image sensor sensitivities were well known in the art at the time the invention was made. Therefore, it would have been obvious for one skilled in the art to have been motivated to record and watermark camera parameters such as camera image sensor bad pixel characteristics, sensor current values, and image sensor sensitivities into a digital image in addition to the parameters disclosed by the combination of Narayanaswami, Inoue and Safai that are watermarked into a digital image. Doing so would provide a means for accessing the camera parameters present when the image was taken when accessing the image itself.

Re claim 5, Narayanaswami states that the camera setting information includes information related to the flash intensity used to capture the digitized image (page 3, paragraph 34).

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Re claim 6, Narayanaswami states that information related to the ambient light present when the image was captured is included in the watermark (page 3, paragraph 34).

Re claim 7, Narayanaswami states that a number of dynamically measured camera characteristics are included in the watermark (page 3, paragraph 34).

Re claim 8, Narayanaswami discloses a digital camera system, comprising: an imager (page 3, paragraph 32); camera characteristics suitable to enhance image reproduction (parameters such as camera location, image mode, etc.) (page 4, paragraph 43); a first variable camera setting; (focal length, focus distance, frame number, image quality, flash status, light meter readings, etc.) (page 3, paragraphs 34-35); a watermark generator used to embed in the form of a watermark at least one of said camera characteristics and said first variable camera setting information in an image captured by the camera; and a key generator configured to generate an encryption key used to encrypt a watermark (page 4, paragraph 42 - page 5, paragraph 48). Narayanaswami further states that the parameters listed are not illustrative of every parameter that may be watermarked and that one of ordinary skill in the art could envision additional parameters that may be recorded and utilized in accordance with the teachings of the invention. However, although the Narayanaswami reference discloses all of the above limitations it fails to specifically state that any of the camera

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characteristics capable of being watermarked are static camera characteristics suitable to enhance image reproduction or suitable to identify a camera that is the source of the image.

Inoue discloses a digital camera capable of storing additional image information together with sensed image information. Inoue states that in order to print an image a printer (2) requests the digital camera (1) to transfer image information and image additional information (11) corresponding to that image. Inoue further states that a processing selector (12) selects appropriate print processing based on the obtained image additional information (11) (figs. 1-2; col. 4, lines 35-65). In addition, Inoue states that the image additional information (11) used for image processing (used to enhance image reproduction) may include digital input device unique information such as camera type information (13-16) (static camera characteristics) (col. 4, line 66-col. 5, line 22). Thus, it can be seen that Inoue teaches receiving information on a first static camera characteristic suitable to enhance image reproduction (image additional information 11 is used to select an appropriate one of a plurality of kinds of printing control information) and receiving information on a first static camera characteristic suitable to identify a camera that is the source of the image (the image additional information 11 used for image processing may include digital input device unique information such as camera type information 13-16). Therefore, it would have been obvious for one skilled in the art to have been motivated to include image additional information such as camera type information as disclosed by Inoue as one of the camera characteristics capable

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of being watermarked as disclosed by Narayanaswami. Doing so would provide a means for attaching information regarding static camera characteristics in order to perform the most suitable printing control processing (Inoue: col. 4, lines 61-65). Although the combination of the Narayanaswami and Inoue references discloses all of the limitations it fails to specifically state the first static camera characteristic suitable to identify a camera that is the source of the image includes embedding unique single camera characteristics such as the serial number of a camera.

Safai discloses a digital camera including a digital image processor that includes an authentication stamper. Safai states that an authentication stamper (418) of a digital image processor (310,400) of a digital camera (300) may attach user specific and camera specific information to image data such as camera user name, camera user address and camera serial number (figures 4, 10A, 10B; col. 15, lines 4-50). Therefore, it would have been obvious for one skilled in the art to have been motivated to attach user specific and camera specific information such as camera user name, camera user address and camera serial number as disclosed by Safai to image data captured by the digital camera system disclosed by the combination of the Narayanaswami and Inoue references. Doing so would provide a means for easily verifying and authenticating that an image was captured by a specific camera or camera user.

Re claim 10, the watermark disclosed by Narayanaswami is visually imperceptible (page 5, paragraph 45).

Re claims 11-13, Narayanaswami states that the variable camera settings to be watermarked consist of shutter speed, aperture setting, flash setting as well as other camera settings (page 4, paragraph 43).

Re claims 14-16, the combination of Narayanaswami, Inoue and Safai discloses all of the limitations of claim 8 above. Additionally, Narayanaswami states that a first static camera characteristic (image sensor shape) (camera capable of being in portrait or landscape mode indicates that the image sensor of the camera is rectangular in shape) as well as many other parameters may be embedded as a watermark in a digital image (page 3, paragraph 35; page 4, paragraph 43). However, the combination of Narayanaswami, Inoue and Safai does not specifically state that camera parameters such as imager current, defective pixels associate with the imager, and gamma information are embedded as a watermark in a digital image. The Examiner takes **Official Notice** that camera parameters such as imager current, defective pixels associate with the imager, and gamma information were well known in the art at the time the invention was made. Therefore, it would have been obvious for one skilled in the art to have been motivated to record and watermark camera parameters such as imager current, defective pixels associate with the imager, and gamma information into a digital image in addition to the parameters disclosed by the combination of Narayanaswami, Inoue and Safai that are watermarked into a digital image. Doing so would provide a means for accessing

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the camera parameters present when the image was taken when accessing the image itself.

Re claim 26, see claim 1. Narayanaswami also states that the digitized image and the data set may be transmitted (page 4, paragraph 41).

Re claims 27, 30 and 33, Safai states that a unique single camera characteristic may include an image capture device serial number (col. 15, lines 46-50).

Re claims 28-29, 31-32 and 34-35, Safai states the image capture information to be appended to image data may include information about the user who has taken the image such as a user identification (col. 15, lines 46-50).

**Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Narayanaswami et al. in view of Inoue in view of Safai and further in view of Isnardi et al. US 6,037,984.**

Re claim 9, the combination of the Narayanaswami, Inoue and Safai references discloses all of the limitations of claim 8 above. However, Narayanaswami states that the stamping/watermarking information is invisible.

Isnardi states that digital watermarks are well known in the art. Isnardi states that although watermarks are generally invisible, in some application, it is



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desirable to produce a visible watermark that can be removed by an authorized image decoder (col. 1, lines 11-25). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a visually perceptible watermark as disclosed by Isnardi in the camera capable of watermarking camera parameters into digital image data as disclosed by the combination of Narayanaswami, Inoue and Safai. Doing so would provide a means for visibly displaying a watermark on an image and only allowing it to be removed by an authorized image decoder (Isnardi: col. 1, lines 21-25).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contacts***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is **(571) 272-7312**. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached at **(571) 272-7372**. The fax phone number for submitting all Official communications is **(571) 273-7300**. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at **(571) 273-7312**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kelly L. Jerabek/

Patent Examiner, Art Unit 2622

Art Unit: 2622

/Lin Ye/

Supervisory Patent Examiner, Art Unit 2622